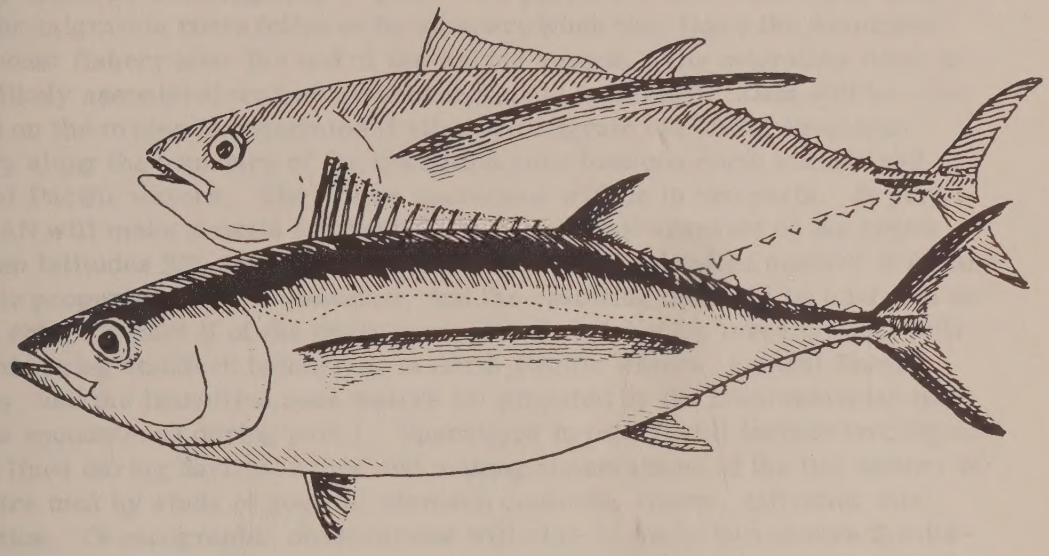
FISHING INFORMATION
SEPTEMBER 1970



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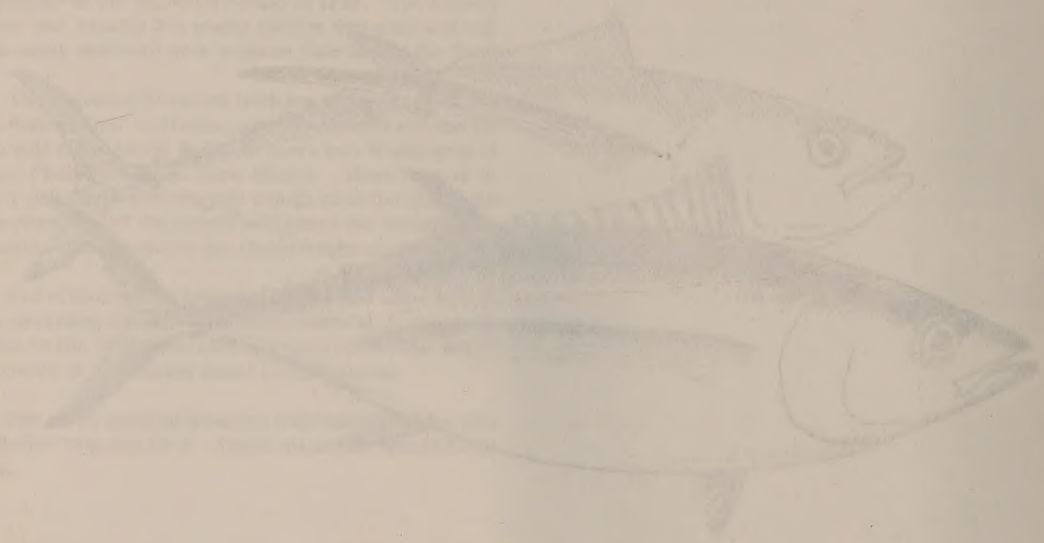
UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES
FISHERY-OCEANOGRAPHY CENTER
LA JOLLA, CALIFORNIA



JORDAN CONDUCTS LATE SEASON ALBACORE SURVEY

R/V DAVID STARR JORDAN departed San Diego on October 5 for an 18-day albacore-oceanography cruise. The purpose of the cruise is to investigate the migration route followed by albacore when they leave the American west coast fishery near the end of the fishing season. The migration route is most likely associated with some oceanographic feature(s). Data will be collected on the cruise to determine if albacore migrate out of the American fishery along the boundary of the transition zone between north Pacific and central Pacific waters. The cruise operations will be in two parts. In part I JORDAN will make a rapid north-south oceanographic transect of the region between latitudes 35°-40° N along longitude 140° W. A limited number of oceanographic properties will be observed, and the resulting data will be analyzed on board ship. In part II of the operations, detailed fisheries investigations will be made using standard techniques in north Pacific waters, central Pacific waters, and the transition zone waters as indicated by the environmental conditions encountered during part I. Operations in part II will include trolling of 12 jig lines during daylight hours and making observations of the life history of albacore tuna by study of gonads, stomach contents, livers, and other vital statistics. Oceanographic observations will also be made to measure the distribution of environmental characteristics associated with the migration of the albacore and seasonal termination of the American west coast.

R. Michael Laurs, Leader
Fishery-Oceanography Group

SEA SURFACE TEMPERATURE CHARTS, EASTERN PACIFIC OCEAN
SEPTEMBER 1970

Acknowledgements

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U.S. Weather Bureau, San Diego, California
U.S. Coast and Geodetic Survey, Pacific Marine Center, Seattle, Washington
Global Marine Inc.; GLOMAR CHALLENGER
Hopkins Marine Station, Pacific Grove, California, J.P. Balesteri
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Kelco Company, San Diego, California
Living Marine Resources Inc., San Diego, California
Matson Navigation Company, San Francisco; S.S. CALIFORNIAN
Oregon State University, Department of Oceanography, Corvallis, Oregon
Pacific Missile Range, Range Operations Department, Geophysics Division, Point Mugu, California
Scripps Institution of Oceanography, La Jolla, California, by Margaret Robinson
Scripps Institution ofOceanography Research Vessels ALEXANDER AGASSIZ, THOMAS WASHINGTON, MELVILLE, ALPHA HELIX
University of Washington, Seattle, Washington; R/V THOMAS THOMPSON
Fishing Vessels CONNIE JEAN, CRUSADER, MARTINAC
Pacific Environment Institute, Fisheries Research Board of Canada, West Vancouver, British Columbia, by H.J. Hollister from observations by G.C. Wilks at Langara Island Light; R.J. Bourque at Cape St. James Light; Lily Collins at Kains Island Lightstation; O.A. Edwards at Amphitrite Point Light

Charts

Figure 1.--Mean sea surface temperature, eastern north Pacific Ocean. Squares show temperatures at weather ship stations. Numerals on shore are temperatures at coastal and lightship stations.

Figure 2.--Mean sea surface temperature chart, western north Pacific Ocean. Squares show temperatures at weather ship stations. Numerals on shore are temperatures at coastal and lightship stations.

Figure 3.--Deviation of sea surface temperatures, eastern north Pacific Ocean from long term charts of H.O. 225. Hatched areas are colder in 1970.

Figure 4.--Deviation of sea surface temperatures, eastern north Pacific Ocean from those of September 1969. Hatched areas are colder in 1970.

Figure 5.--Mean sea surface temperature, eastern tropical Pacific Ocean. Numerals on shore are temperatures at coastal stations.

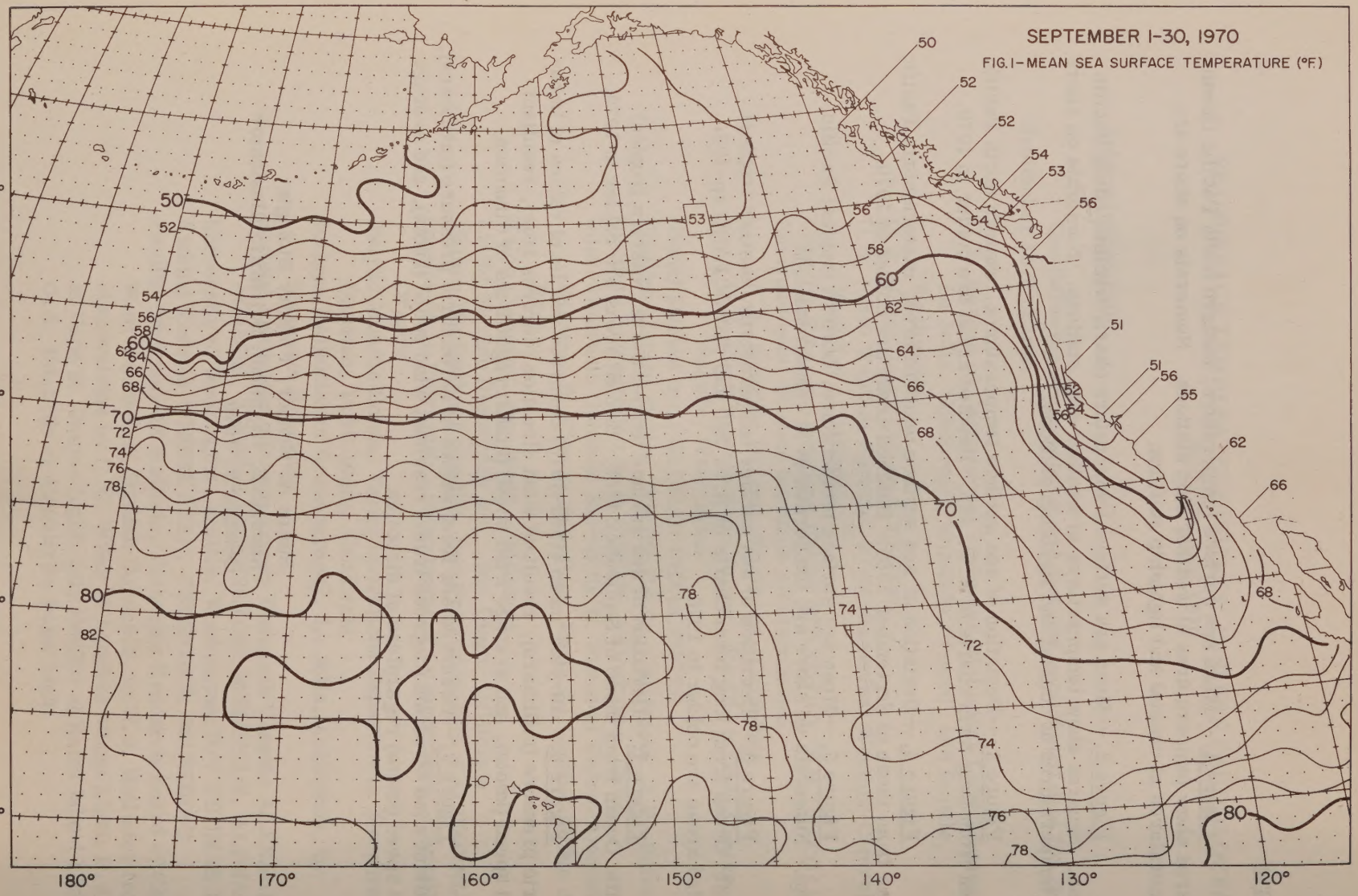
Figure 6.--Deviation of sea surface temperatures, eastern tropical Pacific Ocean from long term charts of H.O. 225 and NAVOCEANO sp-123. Shaded areas are colder in 1970.

Figure 7.--Deviation of sea surface temperatures, eastern tropical Pacific Ocean from those of September 1969. Shaded areas are colder in 1970.

Figure 8.--10-year mean (1961-1970) observed sea level values of barometric pressure (millibars), resultant wind direction (degrees true), resultant wind speed (knots), and average wind speed (knots) regardless of direction.

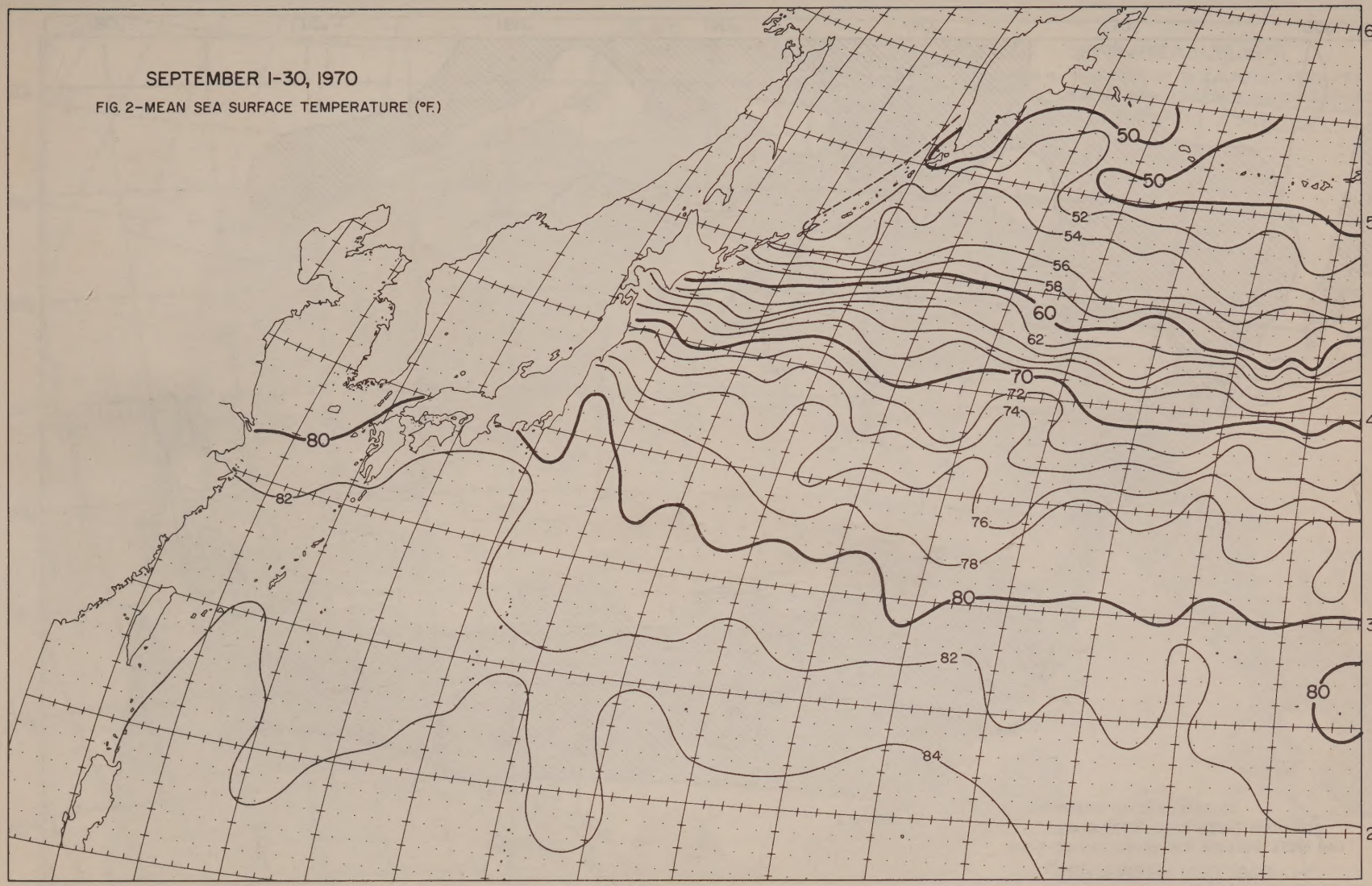
Figure 9.--Observed sea level values of barometric pressure (millibars), resultant wind direction (degrees true), resultant wind speed (knots), and average wind speed (knots) regardless of direction.

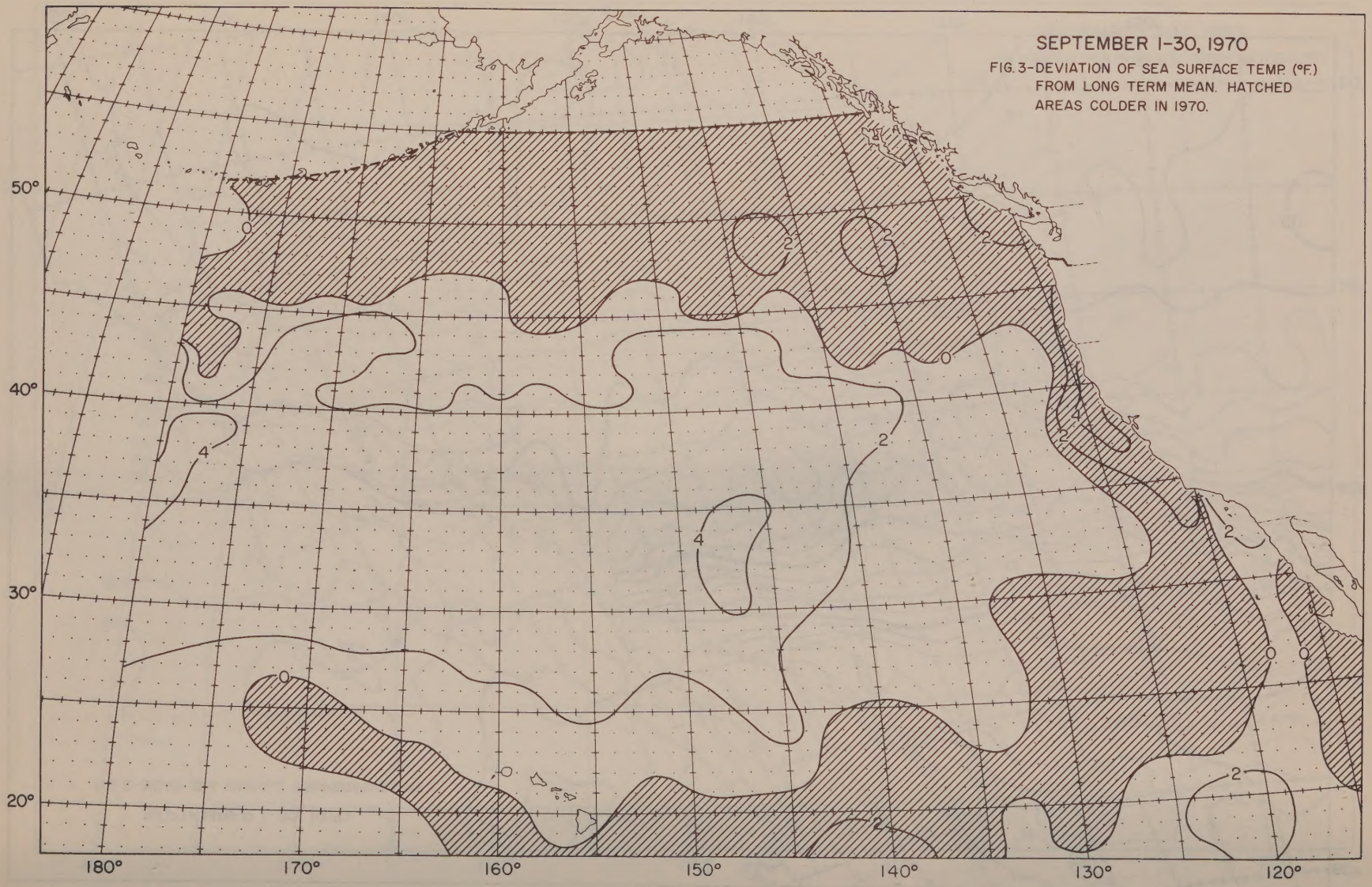
James A. Renner, Fishery Biologist
Kenneth S. Raymond, Scientific Illustrator
October 9, 1970

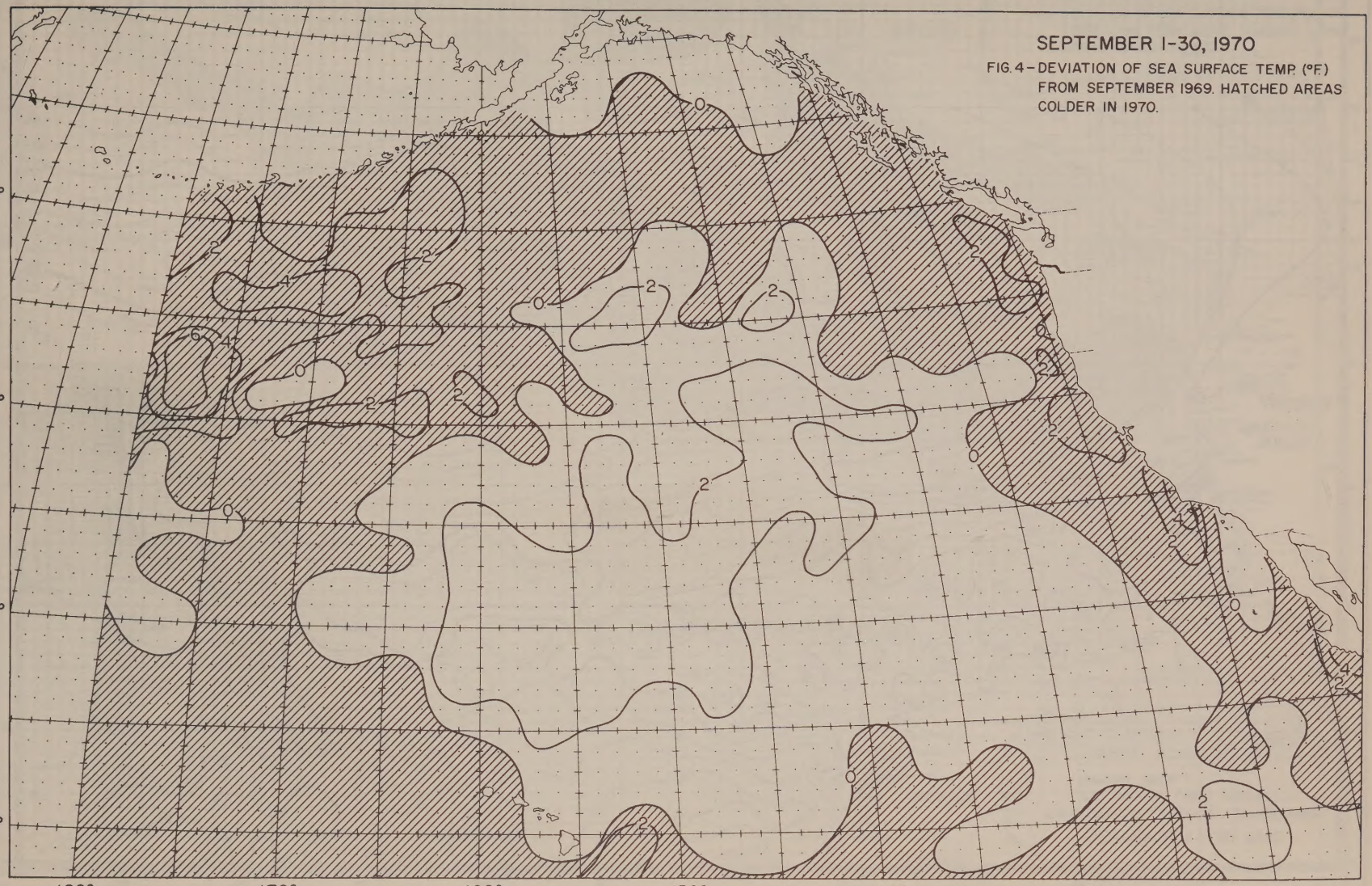

SEPTEMBER 1-30, 1970
FIG. 1 - MEAN SEA SURFACE TEMPERATURE (°F.)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°

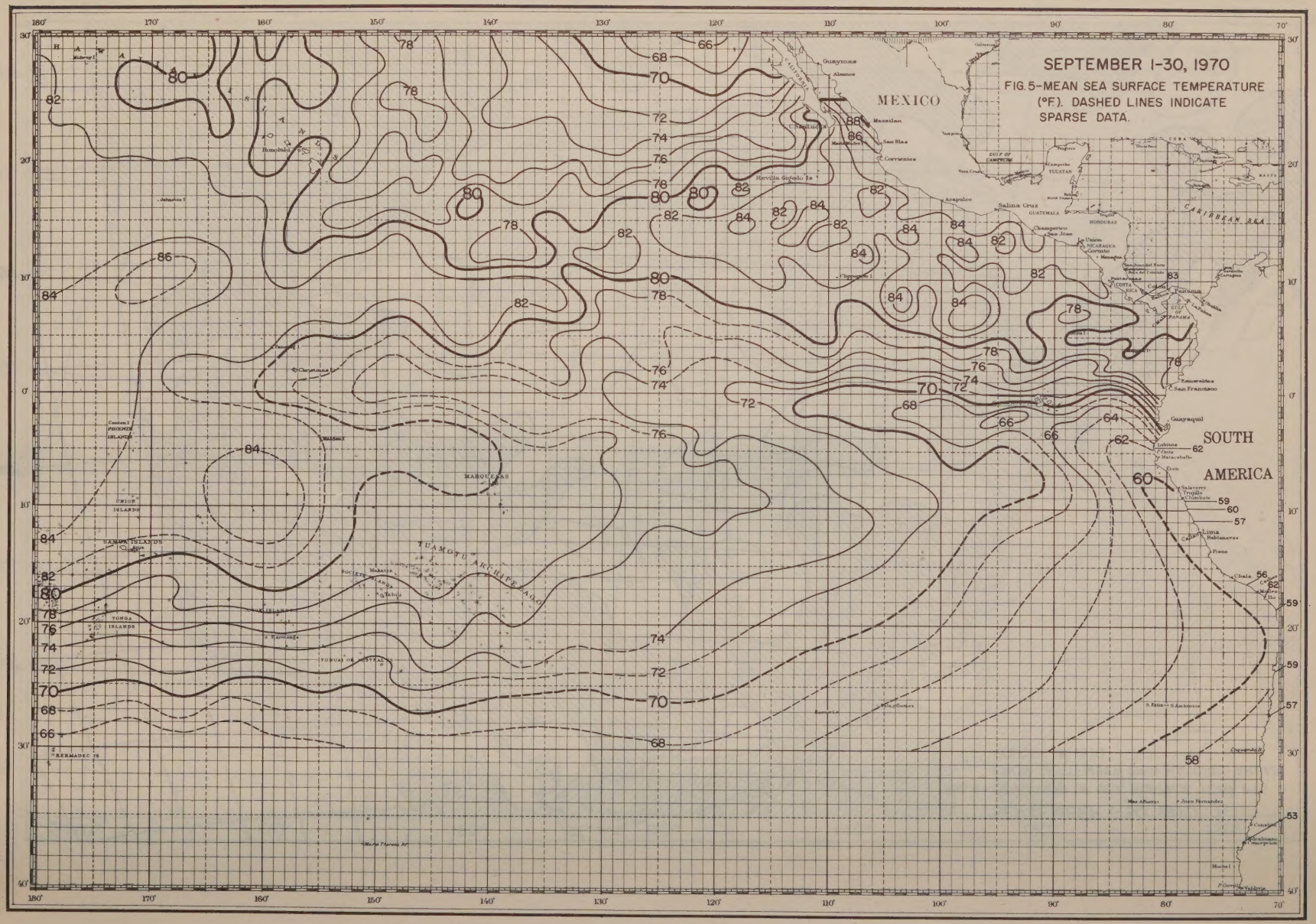
SEPTEMBER 1-30, 1970

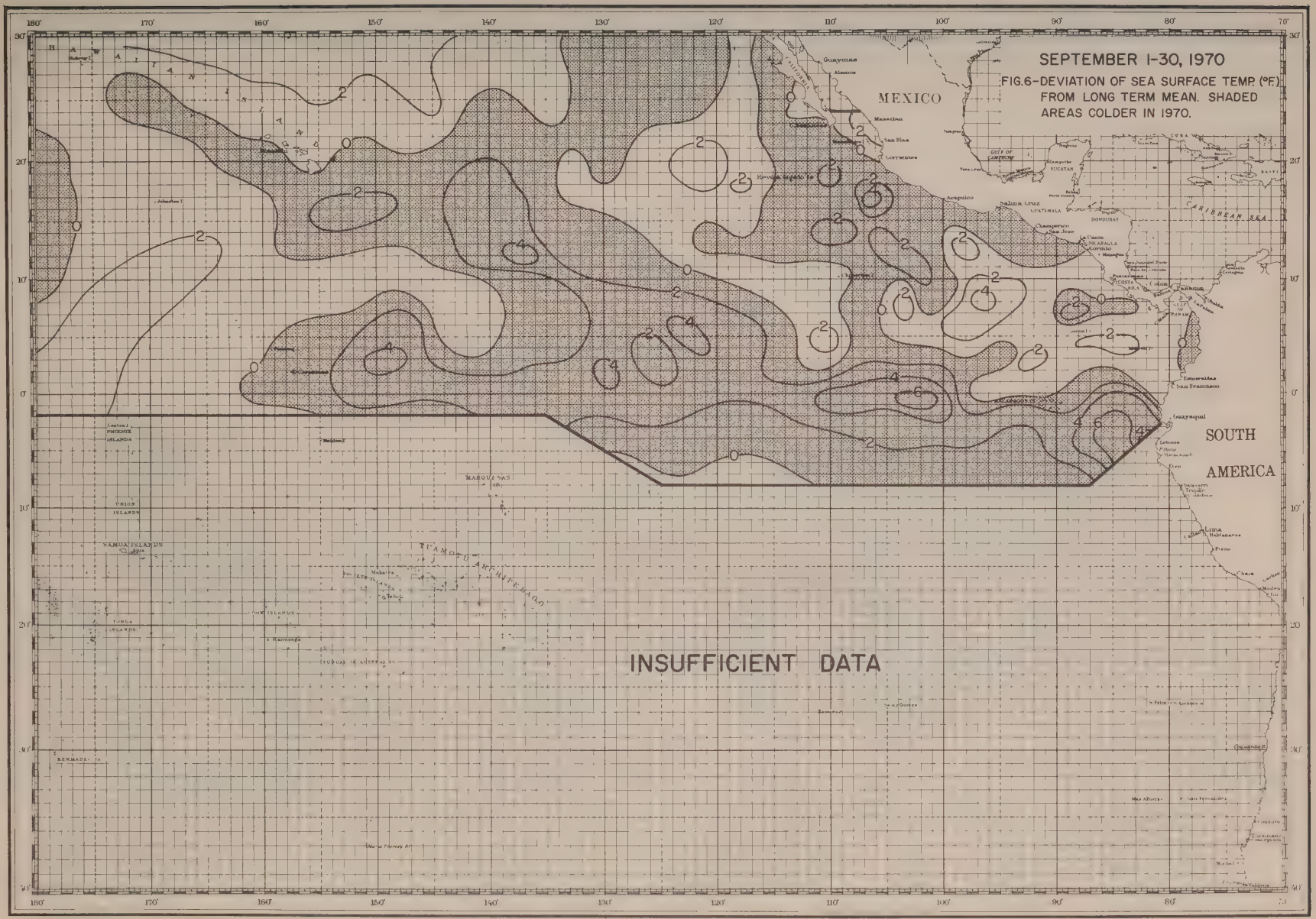
FIG. 2-MEAN SEA SURFACE TEMPERATURE (°F.)

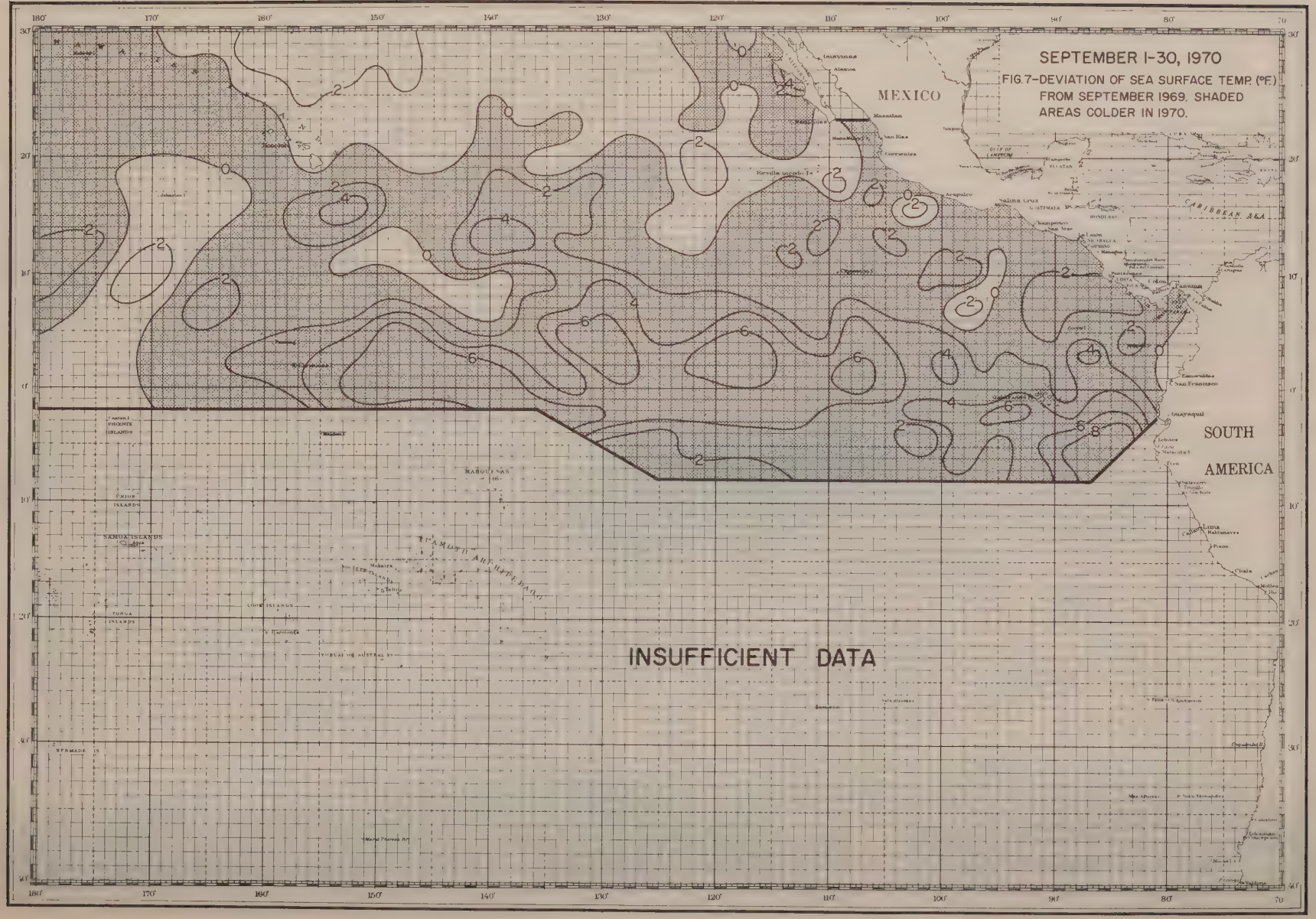


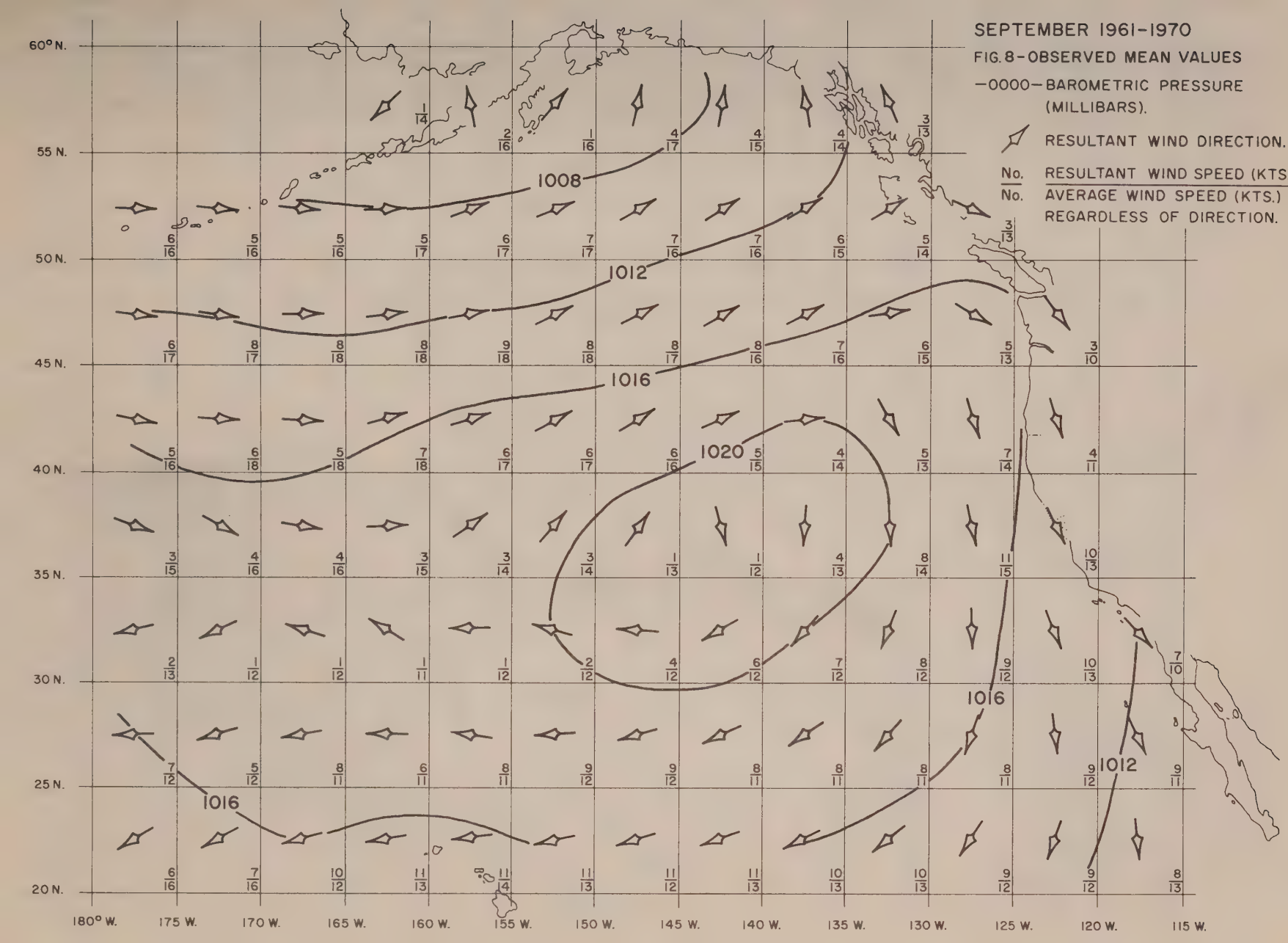

SEPTEMBER 1-30, 1970
FIG. 3-DEVIATION OF SEA SURFACE TEMP. (°F.) FROM LONG TERM MEAN. HATCHED AREAS COLDER IN 1970.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
0
2
4

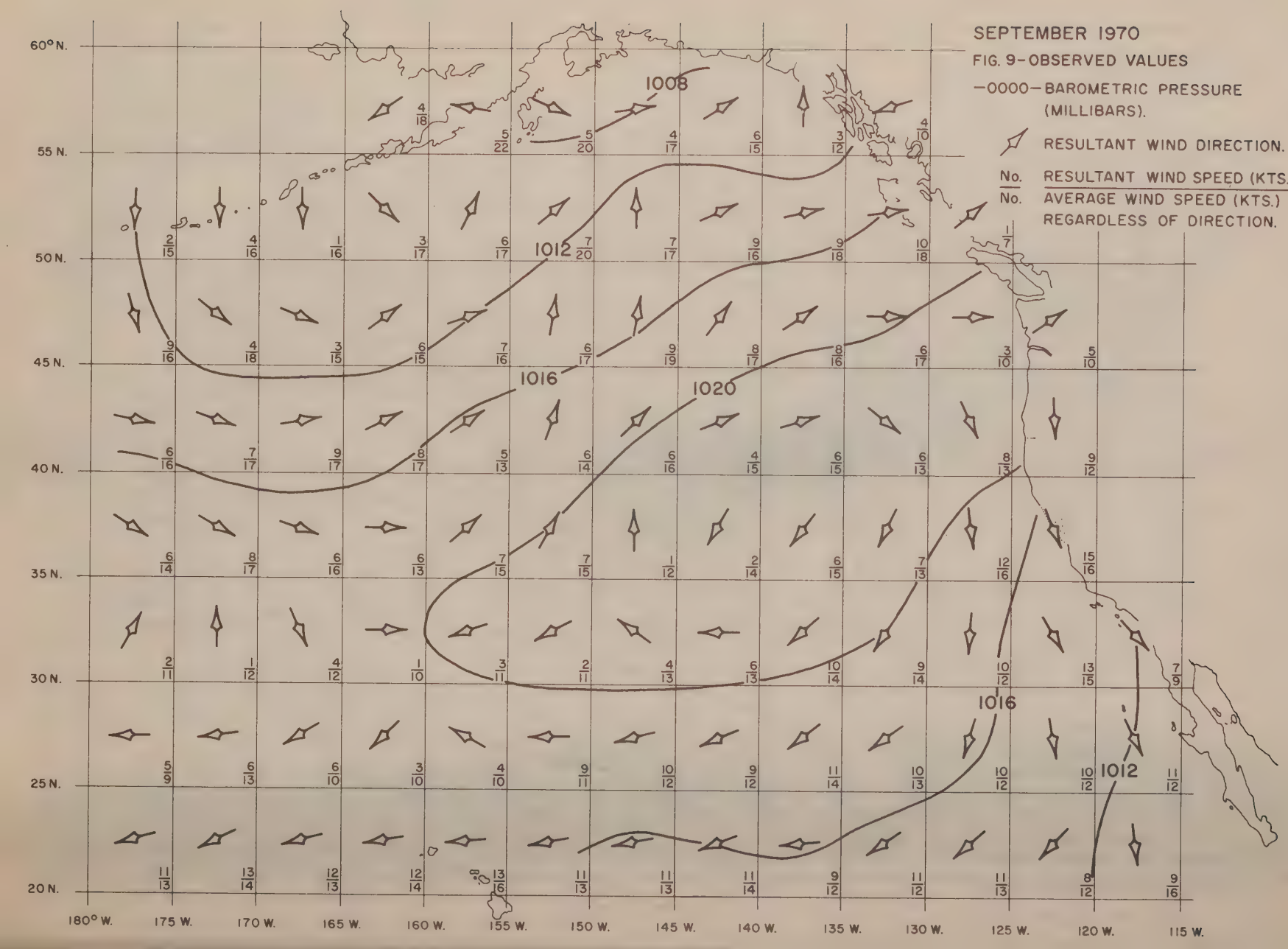

SEPTEMBER 1-30, 1970
FIG. 4 – DEVIATION OF SEA SURFACE TEMP. (°F.) FROM SEPTEMBER 1969. HATCHED AREAS COLDER IN 1970.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°

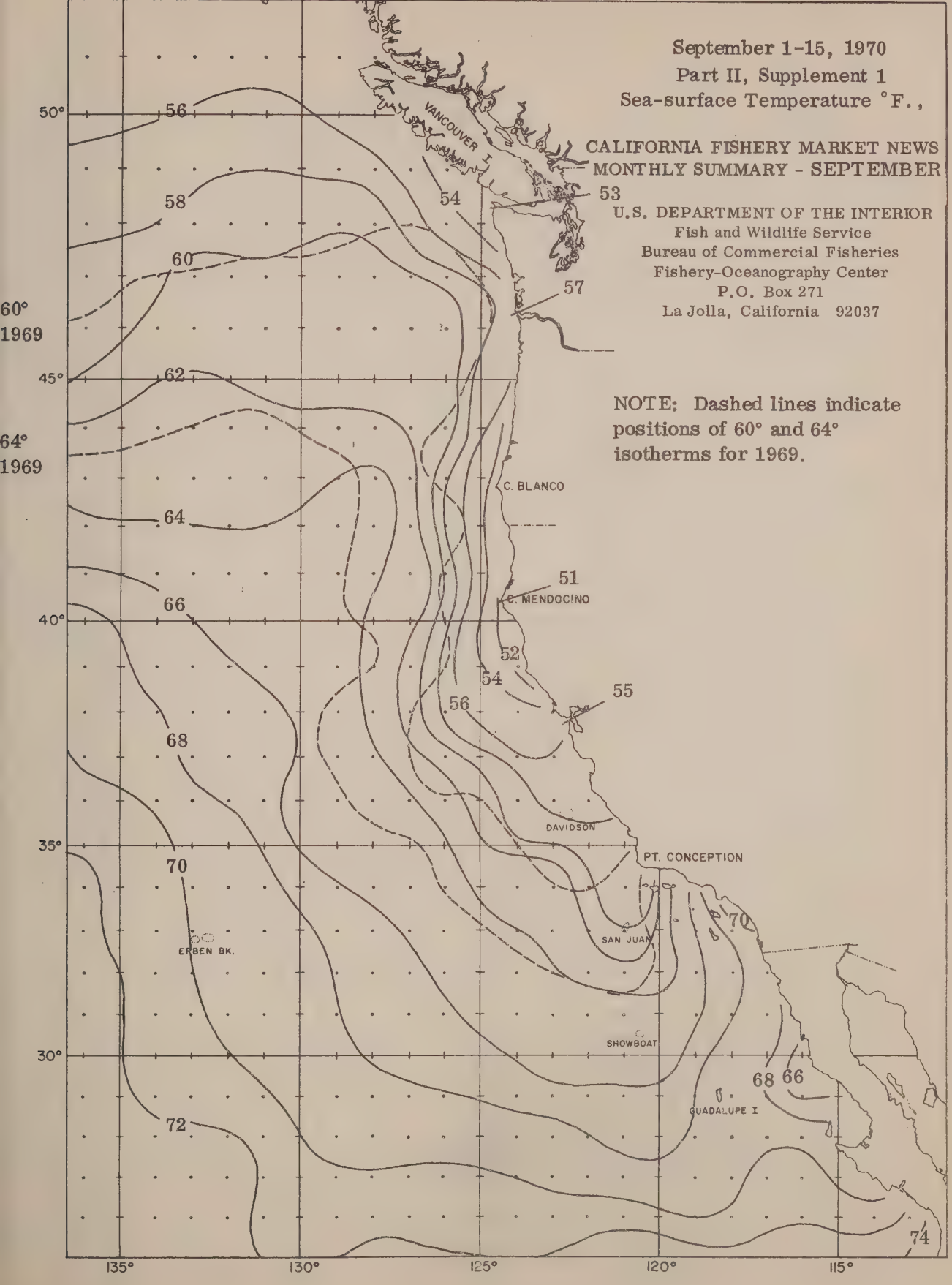

SEPTEMBER 1-30, 1970
FIG. 5-MEAN SEA SURFACE TEMPERATURE (°F). DASHED LINES INDICATE SPARSE DATA.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GULF OF CALIFORNIA
GULF OF PANAMA
HAWAIIAN ISLANDS
TUAMOTU ARCHIPELAGO
MARQUESAS
SAMOA ISLANDS
TONGA ISLANDS
PHOENIX ISLANDS
UNION ISLANDS
KERMADEC IS.
Honolulu
Johnston I.
Christmas I.
Canton I.
Fanning I.
Palmyra I.
Tahiti
Rarotonga
Easter I.
Juan Fernandez
Galapagos Is.
Guaymas
Almejas
Mazatlan
San Blas
C. Corrientes
Revilla Gigedo Is.
Acapulco
Salina Cruz
GUATEMALA
HONDURAS
Champerico
San Jose
La Union
NICARAGUA
Corinto
Managua
San Juan del Norte
COSTA RICA
Puntarenas
Cocos I.
Panama
Taboga I.
Esmeraldas
San Francisco
Guayaquil
Salaverry
Trujillo
Chimbote
Lobitos
Talara
Malabrigo
Lima
Callao
Pisco
Chala
Mollendo
Ilo
Arica
Iquique
Mejillones
Antofagasta
Coquimbo
Valparaiso
Juan Fernandez
Mas Afuera
S. Felix
S. Ambrosio
Mocha I.
Corral
Talcahuano
Concepcion
Chiloe I.
Huafo I.
Mas a Tierra
Mas a Fuera
Pascua I.
Ducie I.
Malanya
Rapa
Rurutu
Tubuai Is.
Austral Is.
Raivavae
Rimatara
Rurutu
Hao
Nukutavake
Pukarua
Reao
Pinaki
Tatakoto
Hereheretue
Mehetia
Vostok I.
Starbuck I.
Malden I.
Jarvis I.
Baker I.
Howland I.
Enderbury I.
Hull I.
Sydney I.
Gardner I.
Nassau I.
Suwarrow I.
Penrhyn
Manihiki
Rakahanga
Pukapuka
Nassau
Danger Is.
Penrhyn
Manihiki
Rakahanga
Pukapuka
Nassau
Danger Is.

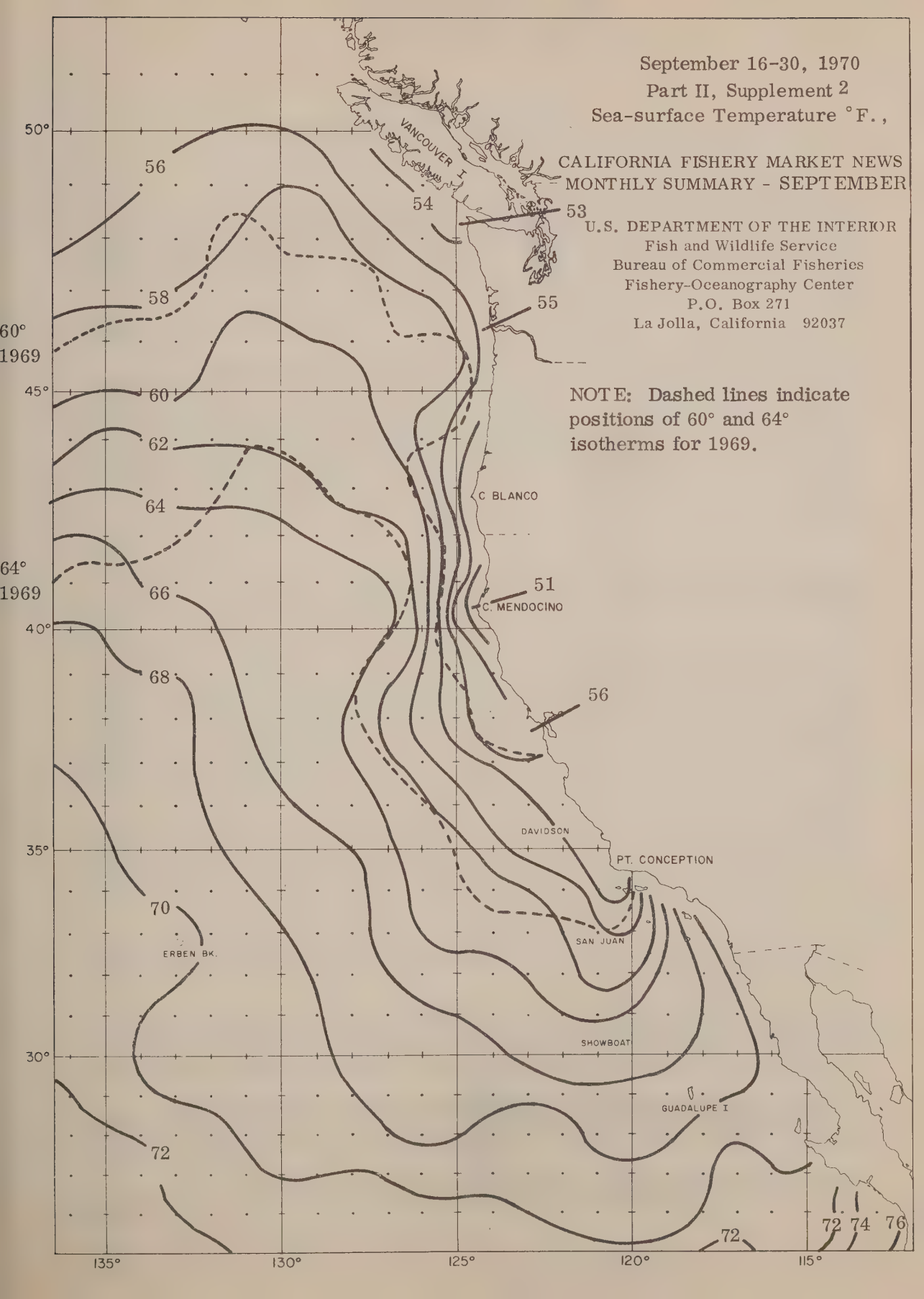

SEPTEMBER 1-30, 1970
FIG.6-DEVIATION OF SEA SURFACE TEMP (°F) FROM LONG TERM MEAN. SHADED AREAS COLDER IN 1970.
INSUFFICIENT DATA
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GUATEMALA
HONDURAS
COSTA RICA
PANAMA
CUBA
HAITI
YUCATAN
GULF OF CAMPECHE
Guaymas
Alamos
Mazatlan
San Blas
Lorrentes
Acapulco
Salina Cruz
Champerico
San Jose
Corinto
Puntarenas
Balboa
Esmeraldas
San Francisco
Guayaquil
Talara
Lima
Callao
Pisco
Chimbote
Trujillo
Salaverry
Paita
Manta
Manzanillo
Acapulco
Johnston I.
Hawaiian Is.
Canton I.
PHOENIX ISLANDS
Enderbury I.
Christmas I.
LINE ISLANDS
MARQUESAS
SAMOA ISLANDS
TONGA ISLANDS
TUAMOTU ARCHIPELAGO
Makatea
Tahiti
Moorea
Raiatea
Tubuai
Rarotonga
Penrhyn
Nassau I.
Suwarrow I.
Samoa
Fakaofo
Nukunonu
Atafu
Nukumanu
Ontong Java
Nuguria Is.
Tasman Sea
Norfolk I.
Lord Howe I.
Kermadec Is.
Raoul I.
Macquarie I.
Auckland Is.
Campbell I.
Antipodes Is.
Bounty Is.
Chatham Is.
Solander I.
Stewart I.
Snares Is.
Auckland
Wellington
Gisborne
New Plymouth
Napier
Hawera
Wanganui
Palmerston N.
Masterton
Westport
Greymouth
Hokitika
Timaru
Oamaru
Dunedin
Invercargill
Bluff
Mt. Cook
Mt. Aspiring
Mt. Tasman
Mt. Egmont
Mt. Ruapehu
Mt. Ngauruhoe
Mt. Tongariro
Mt. Taranaki
Mt. Ruahine
Mt. Hikurangi
Mt. Arthur
Mt. Franklin
Mt. Sefton


SEPTEMBER 1-30, 1970
FIG.7-DEVIATION OF SEA SURFACE TEMP. (°F.) FROM SEPTEMBER 1969. SHADED AREAS COLDER IN 1970.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
INSUFFICIENT DATA


SEPTEMBER 1961-1970
FIG. 8-OBSERVED MEAN VALUES
—0000— BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.).
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1008
1012
1016
1020
1016
1012
1016
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.


SEPTEMBER 1970
FIG. 9-OBSERVED VALUES
—0000— BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.).
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1008
1012
1016
1020
1016
1012
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.


September 1-15, 1970
Part II, Supplement 1
Sea-surface Temperature °F.,
CALIFORNIA FISHERY MARKET NEWS
MONTHLY SUMMARY - SEPTEMBER
U.S. DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Bureau of Commercial Fisheries
Fishery-Oceanography Center
P.O. Box 271
La Jolla, California 92037
NOTE: Dashed lines indicate positions of 60° and 64° isotherms for 1969.
60° 1969
64° 1969
50°
45°
40°
35°
30°
135°
130°
125°
120°
115°
VANCOUVER I.
C. BLANCO
C. MENDOCINO
DAVIDSON
PT. CONCEPTION
SAN JUAN
SHOWBOAT
GUADALUPE I
ERBEN BK.
56
58
60
62
64
66
68
70
72
54
53
57
51
52
55
74


September 16-30, 1970
Part II, Supplement 2
Sea-surface Temperature °F.,
CALIFORNIA FISHERY MARKET NEWS
MONTHLY SUMMARY - SEPTEMBER
U.S. DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Bureau of Commercial Fisheries
Fishery-Oceanography Center
P.O. Box 271
La Jolla, California 92037
NOTE: Dashed lines indicate positions of 60° and 64° isotherms for 1969.
50°
45°
60°
1969
64°
1969
40°
35°
30°
135°
130°
125°
120°
115°
VANCOUVER I.
C. BLANCO
C. MENDOCINO
DAVIDSON
PT. CONCEPTION
SAN JUAN
SHOWBOAT
GUADALUPE I
ERBEN BK.
56
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72
72
72 74 76

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES
Fishery-Oceanography Center
La Jolla, California 92037

BULLETIN NO. 70-6

JIG FISHING OFF CALIFORNIA HAMPERED BY ROUGH WEATHER, GOOD BAIT FISHING CONTINUES OFF PACIFIC NORTHWEST

During the past 2 weeks, rough weather along the central and northern California coasts prohibited jig fishing in any one area for more than a few days. However, moderately good catches have been made by baitboats in the Northwest. A few of the larger jigboats were able to fish during the rough weather, however most boats were locked into ports from Eureka to Morro Bay during the greater part of this period. Brief breaks in the weather permitted fishing activity off Eureka and Cape Mendocino, and good scores of up to 400 fish per day indicate that albacore are still abundant in this region.

Landings in Eureka, San Francisco and Oakland greatly increased during the first week of September, reflecting the good fishing that existed off these ports at the end of August. These landings reached a level that has not been attained in California ports for the past 5 years.

While rough weather was a factor to contend with off central California from Point Arguello to the Farallon Islands, it did not limit jig fishing in this area as much as off northern California. At the end of August it became apparent that good fishing was developing 50 miles outside Davidson Seamount. By the second week of September this area had expanded to include the district 30-100 miles offshore from Point Sur to Pigeon Point, where a few scores as high as 300 fish per day of mixed sizes were reported. Rough weather caused many of the boats which had been fishing off Eureka and San Francisco to head southward for this area. Good weather between the 10th and 14th of September permitted a fleet in excess of 200 boats to gather from Point Sur to Pigeon Point. The best fishing in this area during the second week of September was located about 100 miles west of Point Sur. On September 15, fishing in this central California region slowed, while off Eureka better weather permitted good fishing 80 miles offshore.

Except on September 8, fishing near the 213 fathom spot southwest of San Diego and off southern California remained slow for the past 2 weeks.

Off Oregon and Washington, jig fishing remained poor while baitboats reported average scores of 3-6 tons per day with a few scores greater than 20 tons. Baitboat unloadings contributed more than 80 percent of the Oregon and Washington landings during the past 2 weeks, averaging 100-200 tons per day from September 1-11. The baitboats are currently working in the area from Willapa Bay to Grays Harbor 30-50 miles offshore in 57-59° F water.

Moderate to strong north-northwesterly winds continued to be the predominant weather feature during the past 2 weeks along the west coast from Cape Blanco south to Point Arguello. These winds were particularly strong off northern California, causing intense upwelling from Cape Blanco to San Francisco. Consequently, sea surface temperatures in this region from the coast out to 127° W are 3-5° F below the long-term average and 2-3° F below temperatures for the same period in 1969. Less intense upwelling occurred between San Francisco and Point Arguello; however, sea surface temperatures in this area are still 3-5° F below the long-term average and 2-4° F below those in 1969. South of Point Arguello, sea surface temperatures are 3-5° F below the long-term average in the area around San Juan Seamount and 1-3° F below the average outside the Channel Islands and south to Guadalupe Island due to the transport of cold, upwelled water from the north into this region by the California Current. However, this transport was less intense than it has been for the past 2 months.

Winds off the Pacific Northwest coast decreased during the first 2 weeks in September from what they were during most of July and August. This decrease in northwesterly winds, due to high pressure over the region and several weak frontal passages, caused a corresponding decrease in the intense upwelling along the Oregon coast that was characteristic of most of the summer months. Sea surface temperatures along the southern Washington and Oregon coasts out to about 100 miles offshore warmed 1-5° F as a direct result of this decreased upwelling. A decrease in sea surface temperatures off the Pacific Northwest can be expected during the next 2 weeks as normal seasonal cooling begins.

The tight temperature gradient that was such a prominent feature during the August 15-31 period between Cape Blanco and San Francisco is still present. However, it is not as strong off Cape Mendocino since temperatures outside 125° W have cooled considerably since the end of August. Jig fishing off the west coast is still best along this gradient whenever winds allow fishing activity in this region.

The Extended Forecast Division of the Weather Bureau expects an upper level ridge to develop over the eastern Gulf of Alaska during the next 2 weeks. This condition will keep most storm fronts from entering the Pacific Northwest; however, several frontal passages can be expected during this period whenever the upper level ridge weakens. Above normal temperatures are expected to continue over the Pacific Southwest creating fairly strong pressure gradients and moderate to strong north-northwesterly winds along the coast from Cape Blanco south to outside the Channel Islands off southern California.

The fishery outlook remains essentially unchanged from the one given on September 1 in Bulletin No. 70-5: Good fishing for jigboats off northern California during breaks in the rough weather; the central California district gradually improving during the next 2 weeks, especially southwest of Monterey; and baitboats off Oregon and Washington having continued success as long as water temperatures remain favorable.

For more detailed albacore information off the Oregon coast please see Oregon State University Albacore Central Fish Bulletins 70-L and 70-M. These materials should be available through most of the same outlets as the BCF Fish Bulletins.

September 15, 1970

Staff, Fishery-Oceanography Group
R. Michael Laurs, Leader

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES
Fishery-Oceanography Center
La Jolla, California 92037

BULLETIN NO. 70-7

ALBACORE FISHING IMPROVES, BEST JIG FISHING OFF CENTRAL CALIFORNIA

For the most part albacore fishing has been very good during the past 15 days, except for brief periods when high winds forced boats into ports. The jig fishery has shifted to central California waters and baitboat fishing in the northwest has been generally fair, however, spotty excellent catches are being made when boats are able to get on the fish.

Excellent jig-fishing developed in a large area centered about 80 miles offshore of Moss Landing just south of the compass rose, on September 19. Boats fishing in this area averaged about 250 fish per day and several boats reported scores of 700-900 fish. By September 22 most of the boats that had been fishing off northern California and to the south had moved into central California waters. During the third week of September the center of best fishing shifted to the vicinity of the Monterey Seavalley and good catches were also reported about 30 miles southwest of Point Sur and over Davidson Seamount. High winds and rough seas slowed fishing on September 23 and most boats were forced into central California ports. The winds slackened on September 25, and the large fleet of boats quickly got back on fish. By September 26 excellent fishing associated with fair weather was reported 80-90 miles offshore between Point Arena and Point Delgada with boats averaging about 250 fish per day and a large number of boats reporting catches greater than 500 fish. Exellent jig fishing has continued to date in central California waters with catches averaging about 250-300 fish per day and many boats reporting 400-600 fish. On September 29 and 30, the best fishing was reported about 115 miles off Monterey, however some good catches were also made over the Gorda Seavalley and southwest of Morro Bay near the 1908 fathom spot.

Fair weather allowed very good fishing between about September 15 and 19 in a large area about 80 miles offshore between Cape Mendocino and Eureka. About 150 jig boats fished in this area and averaged about 100-200 fish per day. However, by September 22 most boats had left northern California waters because of high winds and lack of fish.

There are no reports of commercial albacore fishing activity off southern California except for scattered catches in the vicinity of San Clemente Island on September 17.

Baitboats working between Newport and Grays Harbor have had very good fishing on some days with catches reaching 18-20 tons per day. However, for the most part bait fishing has been only fair with reports of catches ranging from 2-6 tons per day. By September 30 most baitboats were fishing about 30 miles off the Columbia River and some baitboats were reported fishing off Newport. Although some baitboats are reported to have returned to California ports, about 35 are still fishing in waters off the Pacific Northwest. There were reports of albacore being caught on jigs in an area 30-40 miles off Cascade Head by a small number of boats passing through Oregon waters during the last week of September. Catches ranged from about 100-400 fish per boat.

Moderate to strong north-northwesterly winds were again the predominant weather feature during the past 2 weeks along the west coast from Cape Blanco south to Point Arguello. However, they diminished somewhat from what they had been during August and the first 2 weeks of September, resulting in less intense upwelling along the coast. Sea surface temperatures in this region remain below the long-term average and temperatures for the same period in 1969. The strong winds and rough seas along the northern and central California coasts hampered fishing activity in these areas at times during the past 2 weeks; however, the development of a Santa Ana condition on September 25 caused the winds to decrease, resulting in light to moderate winds and light seas through the end of the month.

As indicated in the last Bulletin, No. 70-6, an upper level ridge developed over the eastern Gulf of Alaska and western Canada, preventing most storm systems from entering the Pacific Northwest. One exception to this occurred between September 16-19 when several frontal passages caused strong south-southwesterly winds and rough seas offshore Washington and Oregon. However, weather conditions from September 20 to the end of the month allowed baitboats to fish off the Columbia River during the entire period.

A tight sea surface temperature gradient parallel to the coast still exists between Cape Blanco and San Francisco and is most pronounced off Cape Mendocino. Good jig fishing existed in this area during the past 2 weeks in 59-60° F water whenever wind conditions allowed fishing activity.

The Extended Forecast Division of the Weather Bureau expects the upper level ridge to persist over the eastern Gulf of Alaska and western Canada during the first 2 weeks of October. This condition will keep most storm fronts from entering the Pacific Northwest, and those that do will be weak. The pressure ridge will also increase the probability of Santa Ana conditions developing, resulting in light to moderate winds and, consequently, good fishing conditions off central California. With lighter than normal winds expected along the entire U.S. west coast, seasonal cooling of waters offshore should be retarded, allowing temperatures optimal for albacore to remain off central California.

The center of fishing activity for the next 15 days is expected to remain in the central California district between Monterey and Point Arguello. Scattered good fishing may also be expected south of Punta Gorda to Point Arena. Baitboat fishing in the northwest should continue as long as water temperatures and weather remain favorable.

The BCF R/V DAVID STARR JORDAN will depart San Diego on October 5 for an 18-day albacore oceanography cruise. The purpose of the cruise is to investigate the migration route followed by albacore when they leave the American west coast fishery near the end of the fishing season. The migration route is most likely associated with some oceanographic feature(s). Data will be collected on the cruise to determine if albacore migrate out of the American fishery along the boundary of the transition zone between north Pacific and central Pacific waters. The proposed cruise track is along longitude 140° W between approximately 35-40° N, depending on oceanographic conditions. All fish reports from JORDAN cruise will be incorporated into the daily albacore advisory broadcasts over radio station WWD and the Astoria Marine Operatio. JORDAN will also transmit fish reports to interested boats over the normal fishing boat frequencies. The call letters for JORDAN are WTDK.

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